p	q	Sides		
		p^2-q^2	p^2-2pq, $2pq-q^2$	p^2-pq+q^2
3	1	8	3	7
3	1	8	5	7
4	1	15	8	13
4	1	15	7	13
5	2	21	5	19
5	2	21	16	19
6	1	35	24	31
6	1	35	11	31
7	1	48	35	43
7	1	48	13	43
7	3	40	7	37
7	3	40	33	37
8	3	55	16	49
8	3	55	39	49

Also solved by THOMAS E. MASON, A. H. HOLMES, B. F. YANNEY, H. E. TREFETHEN, HORACE OLSON, N. A. DRAXTEN, E. B. ESCOTT, and C. E. GITHENS.

MISCELLANEOUS QUESTIONS.

EDITED BY R. D. CARMICHAEL.

In the teaching of mathematics there are three fields of experience, now more or less separated, which it is desirable to have joined into one; namely, that of teachers in the better high schools, that of teachers in the smaller colleges and that of teachers in the larger and more powerful institutions. The problems in these fields are not as widely separated or as distinct as some have supposed. We need to find a means of funding the experience from all these three sources so that it may become the common possession of all who are at work in these fields.

It is our desire that this department of the MONTHLY shall become an effective means to this end. For this we need the coöperation of a large number of persons engaged in the teaching of mathematics. In this connection there are at least three ways in which our readers may render valuable service to the cause of mathematical education:

(*a*) Give us suggestions as to the plans along which this department should be developed.

(*b*) Propose specific questions on which it is desirable to know what is the general opinion or what is the experience of individual teachers.

(*c*) Respond promptly to the questions printed with a statement of your opinion or an account of your experience or both.

Already we have had a gratifying expression of interest in these matters. We have in hand now an excellent answer to question 5 on culture mathematics and an excellent answer to question 6 on vocational mathematics. Let us have further replies to these and to other questions; let us also have other useful questions proposed. If the interest invoked and the amount of good matter received requires it, we can enlarge this department in later issues so as to meet the demand made upon it.

QUESTIONS.

7. What place should be given to the history of mathematics in courses for prospective high school teachers, and why?

8. One of our correspondents would like to know the experiences of other teachers in giving practice teaching in mathematics during a college course. May we have here the experiences of several teachers?

9. What is the present state of experience with coördinated courses in high school mathematics? What contribution does this promise to the development of mathematics teaching in high schools? What about the corresponding matters in college mathematics? (Note.—An individual correspondent need not answer all the questions in number 9; it is sufficient if he answers only one.)

REPLIES.

Instead of here giving replies to questions on which no communication has yet been printed, we return this time to question 2, giving our space to the following interesting note which was called forth in connection with that question. In this connection it will be of interest to many of our readers to know that the text-book, "The Principles of Projective Geometry," by J. L. S. Hatton, to which reference was made by Mr. Stromquist in the January issue, will be reviewed by h m in the MONTHLY in the near future.

A NOTE ON SYNTHETIC PROJECTIVE GEOMETRY.

By LAO G. SIMONS, Normal College of the City of New York.

The writer of this note is in hearty sympathy with the article by Professor Bussey in the AMERICAN MATHEMATICAL MONTHLY for November, 1913, on "Synthetic Projective Geometry as an Undergraduate Study," and ventures the hope that the experience of a college teacher who has for five years conducted courses simultaneously in synthetic projective geometry and methods of teaching secondary mathematics may be of interest to other teachers of mathematics.

The course in projective geometry in the Normal College is a three-hour course for one semester and follows a set of notes prepared by Dr. George H. Ling, formerly of Columbia University and now at the University of Saskatchewan, based on Doehlemann's Projektive Geometrie in the *Sammlung Göschen.* It includes the following topics in the order named: Part I. Central projection and projection from an axis with the elements at infinity, geometric prime forms, perspective prime forms; principle of duality; the anharmonic ratio; harmonic forms defined metrically and descriptively; complete four-point and four-side with examples of such interest as bisecting a line or an angle by means of a straight edge alone; figures in plane homology; projective relation between prime forms with the geometric construction of the fourth element of an anharmonic ratio, similar and congruent ranges, with such examples as determining a line through the inaccessible intersection of two lines; superposed projective forms with the important theorems on the number of double elements possible and Steiner's geometric determination of these, involution, Desargues's theorem for a complete quadrangle, brought up again later for the circle and conic. Part II. Applications. Geometrical figures (in the plane) generated by projective prime forms,